



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,401	02/27/2004	Jeffrey Wannamaker	TVW/APP52US	5238
59906	7590	07/31/2007	EXAMINER	
SYNNESVEDT & LECHNER, LLP			DAO, THUY CHAN	
TVWORKS, LLC			ART UNIT	PAPER NUMBER
1101 MARKET STREET			2192	
SUITE 2600				
PHILADELPHIA, PA 19107				
MAIL DATE		DELIVERY MODE		
07/31/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/789,401	WANNAMAKER ET AL.
	Examiner	Art Unit
	Thuy Dao	2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 May 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-13,16 and 18-32 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,3-13,16 and 18-32 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 27 February 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on May 21, 2007 has been entered.

2. Claims 1, 3-13, 16, and 18-32 have been examined.

Response to Amendments

3. Per Applicants' request, claims 1, 3, 9-11, 16, 18, and 25 have been amended. Claims 2, 14-15, and 17 have been canceled. Claims 31-32 have been added.
4. The objection to drawing FIG. 3 is withdrawn in view of Applicants' amendments.
5. The objection to the specification is withdrawn in view of Applicants' amendments.
6. The 35 USC §112, second paragraph rejection over claims 2-3, 9, 11-15, 17-18, 25-27, and 30 is withdrawn in view of Applicants' amendments.

Response to Arguments

7. The Applicants are thanked for a thorough reply. Applicants' arguments have been fully considered. However, they are not persuasive.

Claim 1 is the representative claim (Remarks, page 12, line 1).

Applicants asserted, "... One important aspect of the claimed invention prioritizing p-code methods and enabling preferential processing of the p-code methods based upon this the prioritizing. By providing priority levels, a processor can compile the p-code file in a structured order that will ensure that any essential method steps are compiled before any non-essential steps" (Remarks, page 12, lines 1-5).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "By providing priority levels, a processor can compile the p-code file in a structured order ...", emphasis added) are not recited in the rejected claim(s). Although the claims

are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The plain language of the claims only recites, "*at least one profile parameter including an associated priority level above a threshold level*".

After further consideration, the examiner notes that Beadle also discloses:

at least one profile parameter (e.g., FIG. 8, parameter COUNTER, col.8; 61-65; col.9: 11-27);

an associated priority level (e.g., FIG. 8, block 820-822, an associated priority level as the boolean ALLOWED with two levels: first level (priority level 0) as ALLOWED = FALSE and not Set JIT enable and second level (priority level 1) as ALLOWED = TRUE and set JIT enable, col.9: 28-39; col.7: 65 – col.8: 12);

identifying one or more p-code methods that have a least one profile parameter above a threshold level (e.g., FIG. 8, block 816, profile parameter COUNTER > threshold /YES → block 820, the associated priority level ALLOWED = TRUE (priority level 1) → block 822, set JIT enable (TRUE), col.9: 28-51; col.8: 6-21).

Accordingly, Applicants' arguments are not persuasive. Per the plain language of the claims, Beadle also discloses the newly added limitations.

Drawings

8. The drawings are objected to because of minor informality: FIG. 4, the reference number "454" should be - -445- - as disclosed in specification, page 13, lines 30-31 and page 14, lines 5-6.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

Art Unit: 2192

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

9. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Furthermore, as set forth in the previous Office action, page 2, paragraph 6, the first sentence of the abstract is considered to read as - -[[The present invention is a]] A method and system for annotating a Java application file ...- -.

Appropriate correction is required.

Claim Objection

10. Claims 31-32 are objected to because of minor informalities.

The examiner notes that the Applicant added claims 31-32 without pointing out the text portions supporting limitations recited in said new claims. In the specification, page 5, lines 25-33 briefly discuss "method attribute" and "attribute table", but do not fully support the newly added limitations "said at least one profile parameter is stored as a method attribute in an attribute table".

Under the principles of compact prosecution, claims 31-32 have been examined as the Examiner anticipates the Applicants, in the next communication with the Office, will either point out the supporting text portions or amend the claims to be fully supported by the originally filed disclosure.

Claim Rejections – 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 3-13, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Beadle (art of record, US Patent No. 6,530,075).

Claim 1:

Beadle discloses a tool for processing a p-code file, comprising:

analyzing p-code methods to be compiled within said p-code file (e.g., FIG. 8, col.8: 61 – col.9: 10, analyzing p-code methods to be compiled within a p-code file; col.6: 24-52, said a p-code file as a main program; col.4: 16-24; col.7: 57 – col.8: 21);

identifying one or more p-code methods (e.g., FIG. 8, blocks 814-824, identifying 818 Compile Again?YES/NO, 822 setJITEEnabled to TRUE; col.8: 12-21, identifying those p-code methods after rerunning a number of times depending on performance thresholds)

at least one profile parameter (e.g., FIG. 8, parameter COUNTER, col.8: 61-65; col.9: 11-27);

an associated priority level (e.g., FIG. 8, block 820-822, an associated priority level as the boolean ALLOWED with two levels: first level (priority level 0) as ALLOWED = FALSE and not Set JIT enable and second level (priority level 1) as ALLOWED = TRUE and set JIT enable, col.9: 28-39; col.7: 65 – col.8: 12);

identifying one or more p-code methods that have a least one profile parameter including an associated priority level above a threshold level (e.g., FIG. 8, block 816, profile parameter COUNTER > threshold /YES → block 820, the associated priority level ALLOWED = TRUE (priority level 1) → block 822, JIT enable (TRUE), col.9: 28-51; col.8: 6-21).

annotating said identified p-code methods to be compiled to enable preferential processing of said p-code file based on said associated priority level of each identified p-code methods (e.g., blocks 820-822, annotating set JIT enable (boolean ALLOWED) → setJITEEnabled(TRUE), col.9: 28-66, so that said identified p-code methods will be just-in-time compiled by a JIT compiler 410 in FIG. 4); and

FIG. 6, col.7-38 – col.8: 1-21, annotating said identified p-code methods by a performance analysis method to be JITEnabled()).

Claim 3:

The rejection of claim 1 is incorporated. Beadle also discloses *said p-code file comprises an application file for processing by a virtual machine (VM) just-in-time (JIT) compiler (e.g., col.6: 24-62).*

Claim 4:

The rejection of claim 1 is incorporated. Beadle also discloses *said annotations are provided in-line with said identified p-code methods (e.g., col.5: 25-36).*

Claim 5:

The rejection of claim 1 is incorporated. Beadle also discloses *said annotations are provided as a separate file (e.g., FIG. 4, said annotations based on information in Data Structure 408, col.6: 24-36).*

Claim 6:

The rejection of claim 1 is incorporated. Beadle also discloses *at least one profile parameter comprises at least one of a method execution time, a frequency of method invocation, a number of instructions and a use of loop structures* (e.g., col.5: 30-36).

Claim 7:

The rejection of claim 1 is incorporated. Beadle also discloses *said at least one profile parameter comprises at least one of an execution time parameter, an input/output utilization parameter and a processor utilization parameter* (e.g., FIG. 7, col.8: 22-53).

Claim 8:

The rejection of claim 1 is incorporated. Beadle also discloses *said analyzing comprises identifying at least one of a static profile parameter and a dynamic profile parameter* (e.g., col.5: 4-26; col.8: 28-42).

Claim 9:

The rejection of claim 1 is incorporated. Beadle also discloses *said annotation comprises setting a normally unused bit within a method access flag field of an identified class file* (e.g., FIG. 6, col.7: 38-64).

Claim 10:

The rejection of claim 1 is incorporated. Beadle also discloses *said annotation comprises selectively setting each of a plurality of normally unused bits within a method access flag field of an identified class file, wherein said unused bits are selectively set to define thereby a priority level of a respective annotated method* (e.g., col.7: 57 – col.8: 21).

Claim 11:

The rejection of claim 3 is incorporated. Beadle also discloses *each identified byte-code portion of said application is associated with one of a plurality of priority*

levels, said annotation being indicative of respective priority levels (e.g., FIG. 8, blocks 814-816, col.9: 1-27).

Claim 12:

The rejection of claim 3 is incorporated. Beadle also discloses *selectively pre-compiling at least a portion of said application file* (e.g., col.5; 59-65).

Claim 13:

The rejection of claim 12 is incorporated. Beadle also discloses *said precompiled portion of said application file is included within a virtual machine* (e.g., FIG. 4, block 400, col.6: 24-36).

Claim 31 (new):

The rejection of claim 1 is incorporated. Beadle also discloses *said at least one profile parameter is stored as a method attribute in an attribute table* (e.g., col.4: 53-64).

Claim Rejections – 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 16, 18-30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beadle in view of Wu (art of record, US Patent Publication No. 2004/0221272 A1).

Claim 16:

Beadle discloses *a method of adapting the interpretation of a p-code method within a p-code file by a virtual machine (VM), comprising:*

identifying one or more p-code methods that have at least one profile parameter including an associated priority level above a threshold level (e.g., col.8: 61-65; col. 9: 28-51; col.8: 6-21);

compiling p-code methods within a p-code file in a prioritized manner (e.g., FIG. 6, col.8: 1-21, blocks 612-614 setting priority, blocks 604-606 setting non-priority; FIG. 8, col.8: 61 – col.9: 10, different priority levels in block 818 Compile Again?YES/NO, block 820-822, setting ALLOWED = TRUE and JITEnabled() to priority TRUE; col.5: 38-66)

associated with compilation priority indicative annotation (e.g., FIGs. 5A-B, col.6: 53 – col.7: 18; col.5: 3-51); and

storing said compiled p-code methods in a cache (e.g. col.5: 19-22).

Beadle does not explicitly disclose [*storing said compiled p-code methods in a cache] for subsequent execution in place of corresponding interpreted p-code methods.*

However, in an analogous art, Wu further discloses [*storing said compiled p-code methods in a cache] for subsequent execution in place of corresponding interpreted p-code methods (e.g., page 2, [0027-0028]).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Wu into that of Beadle. One would have been motivated to do so to re-use native code associated with a previously compiled method by a JIT in-memory cache as suggested by Wu (e.g., [0027-0028]).

Claims 18-20:

Claims 18-20 recite the same limitations as those of claims 3-5, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claims, it also teaches all of the limitations of claims 18-20.

Claim 21:

The rejection of claim 16 is incorporated. Beadle also discloses *in response to cache memory utilization above a threshold level, prioritizing the contents of said cache memory* (e.g., FIG. 8, block 822, col.9: 30-39).

Claim 22:

The rejection of claim 21 is incorporated. Beadle also discloses *said cache memory contents are prioritized by deleting from said cache compiled code associated with a least recently executed method* (e.g., FIG. 6, blocks 604 and 612, col.7: 45-50 and 65-67).

Claim 23:

The rejection of claim 21 is incorporated. Beadle also discloses *said cache memory contents are prioritized by deleting from said cache compiled code associated with a previously compiled method having a lower priority level than a presently compiled method* (e.g., col.9: 30-39).

Claim 24:

The rejection of claim 20 is incorporated. Beadle also discloses *compiled byte-code stored in said cache is accessed via a cache map, said cache map being updated in response to a change in cache utilization* (e.g., col.6: 24-52).

Claim 25:

The rejection of claim 18 is incorporated. Beadle also discloses *compiling non-annotated byte-code within said application if said non-annotated byte-code utilizes virtual machine resources beyond a threshold level* (e.g., FIG. 8, block 818, col.9: 21-27).

Claim 26:

The rejection of claim 25 is incorporated. Beadle also discloses *said compiled non-annotated byte-code is assigned a priority level in accordance with said utilized virtual machine resources* (e.g., col.9: 1-27).

Claim 27:

The rejection of claim 26 is incorporated. Beadle also discloses *said priority level of said annotated byte-code is further adapted in accordance with said utilized virtual machine resources* (e.g., col.8: 22-53).

Claim 28:

The rejection of claim 20 is incorporated. Beadle also discloses *said compiled annotated byte-code is assigned a priority level in accordance with said utilized virtual machine resources* (e.g., col.8: 61-67).

Claim 29:

The rejection of claim 28 is incorporated. Beadle also discloses *said priority level of said annotated byte-code is further adapted in accordance with said utilized virtual machine resources* (e.g., col.8: 22-53).

Claim 30:

The rejection of claim 26 is incorporated. Beadle also discloses *said virtual machine resources comprise at least one of an execution time parameter, an input/output utilization parameter and a processor utilization parameter* (e.g., col.8: 22-53).

Claim 32 (new):

Claim 32 recites the same limitations as those of claim 31, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claims 32.

Conclusion

15. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone is (571) 272 8570. The examiner can normally be reached on Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Dao



TUAN DAM
SUPERVISORY PATENT EXAMINER